10/534883

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization International Bureau



(43) International Publication Date 10 June 2004 (10.06.2004)

## PCT

## (10) International Publication Number WO 2004/048106 A1

(51) International Patent Classification7:

B41J 2/05

(21) International Application Number:

PCT/AU2003/001512

(22) International Filing Date:

17 November 2003 (17.11.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 10/302,617

23 November 2002 (23.11.2002) U

- (71) Applicant (for all designated States except US): SILVER-BROOK RESEARCH PTY LTD [AU/AU]; 393 Darling Street, Balmain, New South Wales 2041 (AU).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): SILVERBROOK, Kla [AU/AU]; Silverbrook Research Pty Ltd, 393 Darling Street, Balmain, New South Wales 2041 (AU).
- (74) Agent: SILVERBROOK, Kia; Silverbrook Research Pty Ltd, 393 Darling Street, Balmain, New South Wales 2041

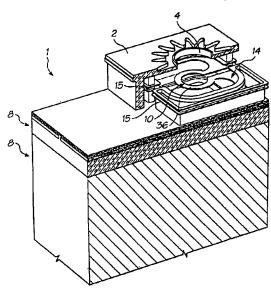
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GII, GM, KE, I.S, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, IT, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: THERMAL INK JET PRINTHEAD WITH LOW HEATER MASS



(57) Abstract: There is disclosed an ink jet printhead which comprises a plurality of nozzles and one or more heater elements (10) corresponding to each nozzle. Each heater element (10) is configured to heat a bubble forming liquid in the printhead to a temperature above its hoiling point to form a gas bubble therein. The generation of the bubble causes the ejection of a drop of an ejectable liquid (such as ink) through the respective corresponding nozzle (3), to effect printing. Each heater element includes solid material and is configured so that, when heated, a mass of less than 10 nanograms of that solid material is heated for heating the bubble forming liquid.

